

### **REMARKS**

Reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

It should be noted that paragraph references are to the paragraphs appearing in the Published U.S. Application No. 2009/0017085.

Claims 15 and 27 have been cancelled herein without prejudice or disclaimer.

Claims 6 – 11, 19, 20 and 26 have been withdrawn.

By this amendment, claims 1, 12 – 14 and 21 have been amended. Such amendments are fully supported in the as-filed specification.

The presently pending claims are 1 – 5, 12 – 14, 16, 17 and 21 – 24.

### **SUPPORT FOR AMENDMENTS (35 USC § 112)**

The Examiner has rejected claims 12 and 13 under 35 USC § 112, second paragraph, as being indefinite. This rejection is respectfully traversed.

Claim 1 has been amended and now reads as follows:

“1. Self-supporting films essentially consisting of:

a) between 40 and 80% by weight of a filmogenic substance consisting of a maltodextrin,

b) between 15 and 55% by weight of a plasticiser,

c) between 0.05% and 30% by weight of an active ingredient for food or pharmaceutical use, on the total weight of said films,

wherein said films are free from hydrocolloids.”

Claim 1 as amended finds antecedent basis in the previously presented Claim 1 in combination with previously presented Claim 15, now cancelled, as well as in all the Examples (see Figure 1 and Figure 2).

In amended Claim 12, the recitation “for therapeutic use” has been deleted, while “active principle” in Claims 12, 13, 14, and 21 has been substituted with “active ingredient” for consistency with Claim 1. Additionally, in Claims 12 and 13, the term “essentially” has been deleted for the sake of clarity.

The rejection under 35 U.S.C. 112, second paragraph, having been overcome, its withdrawal is solicited.

**35 USC § 103(a)**

Claims 14 and 15 stand rejected under 35 USC § 103(a) as being unpatentable over Barnhart and further in view of Levitt (NEJM, 1993). This rejection is respectfully traversed.

Since amended Claim 1 now includes all of the limitations of Claim 15, Applicants wish to point out, that in the outstanding Office Action, the only prior art documents cited with respect to Claim 15 are Barnhart et al. (US2005/0118217) in view of Levitt et al. (NEJM, 1993), at page 10 of said Office Action. Particularly, in the last paragraph, the Examiner states as follows:

In regard to claim 15, Barnhart et al. do not teach the specific weight percentages of the components. The prior art does not disclose the exact claimed values, but does overlap: in such instances even a slight overlap in range establishes a *prima facie* case of obviousness. In re Peterson, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003). Barnhart et al. teach from about 2% to 80% of maltodextrin versus from 40 to 80%; from about 3 to 30% of plasticizer versus from 15 to 55%; and from about 2 to 20% of active versus from 0.05 to 30% of the instant claim.

Applicants respectfully traverse the foregoing conclusion by the Examiner.

In point of fact, the Examiner has arbitrarily taken the information from Barnhart et al. completely out of context in order to reach the claimed invention by erroneously indicating the range of the active ingredient as being 2 to 20%, whereas in Barnhart et al. paragraph [0040] it is in an amount “up to 60% or more of the dry film”!

Barnhart et al., indeed, concern a dissolvable film for delivering a pharmaceutical or cosmetic agent, comprising:

- a first water soluble polymer having a molecular weight from about 5,000 daltons to about 60,000 daltons;
- a second water soluble polymer having a molecular weight greater than about 60,000 daltons; and
- a pharmaceutically or cosmetically active ingredient.

At paragraph [0010], Barnhart states that, “The films according to the present invention contain a mixture of high molecular weight and low molecular weight water soluble components; and a pharmaceutically or cosmetically active ingredient.

Optionally, the films further contain a starch component, a glucose component, a plasticizer and/or a humectant”, and further at paragraph [0015], it explains that “The thin disintegratable films according to the invention contain a mixture of high molecular weight and low molecular weight water soluble components; a pharmaceutically or cosmetically active ingredient; optionally a starch component, a glucose component, a plasticizer and/or humectant; and/or other excipients.” [emphasis added]

The optional character of said glucose component is confirmed at paragraph [0025], whereas the optional character of said plasticizer is confirmed at paragraph [0028].

At paragraph [0018], a large number of possible water soluble polymers are listed, i.e. “water-soluble hydroxypropylmethyl cellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, polyvinyl pyrrolidone, carboxymethyl cellulose, sodium carboxy methyl cellulose, methyl cellulose, polyvinyl alcohol, sodium alginate, polyethylene glycol, xanthan gum, tragacantha, guar gum, acacia gum, arabic gum, carrageenan, polyacrylic acid, methylmethacrylate copolymer, carboxyvinyl copolymers, and various mixtures of the above and other known water-soluble polymers, cellulose derivatives, and/or gums.”

It should be noted that **most of the polymers listed above belong to the class of hydrocolloids**. “A hydrocolloid is defined as a colloid system wherein the colloid

particles are dispersed in water. A hydrocolloid has colloid particles spread throughout water, and depending on the quantity of water available that can take place in different states, e.g., gel or sol (liquid). Hydrocolloids can be either irreversible (single-state) or reversible. For example, agar, a reversible hydrocolloid of seaweed extract, can exist in a gel and sol state, and alternate between states with the addition or elimination of heat. Many hydrocolloids are derived from natural sources. For example, agar-agar and carrageenan are extracted from seaweed, gelatin is produced by hydrolysis of proteins of bovine and fish origins, and pectin is extracted from citrus peel and apple pomace.”  
(source Wikipedia)

In order to make clear what is commonly meant by the term “hydrocolloid”, Applicants enclose herewith, as **Annex A**, a presentation of Timothy J. Foster, who is Associate Professor and Reader in Food Structure, Faculty of Science, at the University of Nottingham (UK), illustrating the structure and properties of hydrocolloids. At page 8 of said presentation, hydrocolloids have been sorted by function, as follows:

Gelling	Thickening	Emulsification
• Pectin	• Pectin	• Gum Arabic
• Alginate	• Alginate	• Propylene glycol Alginate
• Starch	• Starch	• Sugarbeet pectin
• Agar	• LBG	• OSA starch
• Carrageenan	• Guar Gum	
• Gellan	• Xanthan	
• Curdlan	• lamda Carrageenan	
• Cellulosics	• Cellulosics	
• Succinoglycan	• Beta Glucan	
• Scleroglucan		
• Mixtures		

The foregoing list confirms what is stated above, i.e. that most of the polymers listed by Barnhart et al. belong to the class of hydrocolloids.

A further confirmation can also be found in the *Handbook of hydrocolloids* (Glyn O. Phillips, Peter A. Williams; Woodhead Publishing Ltd, 2000). Particularly, at pages 221-222 (enclosed herewith as **Annex B**), hydroxypropyl methylcellulose, hydroxyethyl cellulose, hydroxypropyl cellulose, carboxymethyl cellulose, sodium carboxy methyl cellulose, methyl cellulose are expressly discussed as hydrocolloids.

Barnhart et al., at paragraph 0019, affirm:

[0019] We have found that particularly beneficial properties are obtained when the water soluble polymeric component

includes a combination of low molecular weight polymers (e.g., those less than about 5,000 to about 60,000 daltons) and high molecular weight polymers (e.g., those of about 60,000 to about 150,00 daltons, and to about 500,000 daltons or higher). For example, a combination of hydroxypropyl cellulose (e.g., KluceL grade JF, Hercules Inc., Aqualon Division) and hydroxypropyl methylcellulose (e.g., Methocel, grades F5, E50, E4M, and SG A16M by Dow Chemical) is suitable. These water soluble cellulose derivative polymers have molecular weights of about 140,000; 30,000; 90,000; 400,000; and greater than about 100,000 daltons, respectively.

[emphasis added]

The foregoing finds confirmation in all of the given Examples, where Methocel and KluceL are used.

Therefore, at the time the claimed invention was made, the person of ordinary skill in the art having knowledge of Barnhart et al. as a whole, would clearly know that in the disclosed films the following features are essential:

- a first water soluble polymer having a molecular weight from about 5,000 daltons to about 60,000 daltons, that is a hydrocolloid;
- a second water soluble polymer having a molecular weight greater than about 60,000 daltons, that is a hydrocolloid; and
- a pharmaceutically or cosmetically active ingredient.

Additionally, at paragraph [0022], it is stated that said hydrocolloids are present in an amount of about 2% to about 35% for each polymer, based on the total weight of the dry film. Thus, **the films of Barnhart et al. can contain up to 70% of hydrocolloids.** Further, in paragraph [0023], it is specified that "in one embodiment, the concentration for the high molecular weight polymer is about 5% to 10% and the concentration of the low molecular weight component is about 30% to 80% of the dry film". Thus, according to this embodiment **the films of Barnhart et al. can contain up to 90% of hydrocolloids.**

Additionally, cellulose derivative polymers (claim 2), and especially hydroxypropyl cellulose (claim 5) and hydroxypropyl methylcellulose (claim 6), are exemplified and taught as being preferred.

Therefore, a **skilled person** faced with this document **would never have even conceived of making a film for oral drug delivery without hydrocolloids**, since the latter are **the only components taught to be essential in Barnhart et al.**, for delivering the active ingredient.

Since Levitt et al. has only been cited by the Examiner for its mention of ondansetron, as an anti-emetic active, in view of all the reasons discussed above, it is the opinion of Applicants that the Examiner has, indeed, arbitrarily isolated information from both references in order to conveniently lead to the claimed invention. This is a **clear case of hindsight reconstruction of the claimed invention, which is not permissible**. Actually, as demonstrated above, one of ordinary skill in the art would have never misinterpreted nor ignored the very teaching of Barnhart et al. which is clearly expressed throughout the entire document, as well as the unsuitability of the films disclosed therein for the purposes of the claimed invention.

Thus, since the defects and deficiencies in the teaching of the primary reference to Barnhart et al. are not remedied by the teachings of the secondary reference to Levitt et al., Applicants' claimed invention clearly distinguishes over their combined teaching. Since the Examiner has failed to establish a case of *prima facie* obviousness by a preponderance of the evidence, the rejection has been overcome and its withdrawal is solicited.

Claims 1, 4, 5, 12 – 14, 16 and 17 stand rejected under § 103(a) as being unpatentable over Falkenhausen et al. (WO 2002/02085). This rejection is respectfully traversed.

Claims 21 and 22 stand rejected under § 103(a) over Falkenhausen et al. and further in view of Kasper et al. This rejection is respectfully traversed.

Claims 1 – 5, 12, 13, 16, and 17 stand rejected under § 103(a) as being unpatentable over Barnhart et al. (US 2005/0118217). This rejection is respectfully traversed.

Claims 21 – 24 stand rejected under 35 USC § 103(a) as being unpatentable over Barnhart in view of Kasper et al. US 4,222,973. This rejection is respectfully traversed.

In view of the fact that none of the § 103(a) rejections set forth immediately above include a rejection of Claim 15, which has been incorporated into claim 1, by amendment herein, Applicants submit that independent claim 1, as well as the claims which depend therefrom, serves to distinguish over each of the combination of references advanced by the Examiner. Thus, each of the § 103(a) rejections are deemed to have been overcome and their withdrawal is respectfully solicited since *prima facie* obviousness has not been established by a preponderance of the evidence.

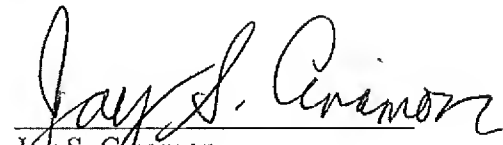
The issuance of a Notice of Allowance is clearly in order and is solicited.

Please charge any fees which may be due to our Deposit Account No. 01-0035.

Respectfully submitted,

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